

#### ABSTRACT OF THE DISCLOSURE

A method of processing a substrate resists unwanted generation of plasma within a waiting chamber of a processing apparatus. The waiting chamber and a processing chamber are depressurized, and an untreated substrate is placed into the processing chamber, by raising a mounting table. A lower opening of the processing chamber is air-tightly closed by an edge portion of the mounting table. Thereafter, gas is introduced into the waiting chamber to increase the pressure therein, and in parallel with this, reactive gas is introduced into the processing chamber, but at a much lower pressure than that of the waiting chamber. Under this condition, high frequency power is applied to electrodes of the processing chamber to generate plasma therein. The likelihood of unwanted plasma generation in the waiting chamber is significantly reduced by the higher pressure therein, relative to the processing chamber.